

**Proposed approach to the Preliminary Determination of
Potentially Jurisdictional Waters of the United States, including Wetlands
for the Conveyance Options proposed in the
Bay Delta Conservation Plan EIR/EIS**

Introduction

The California Department of Water Resources (DWR) proposes the following approach to a preliminary determination of wetlands and other waters potentially under the jurisdiction of the U.S. Army Corps of Engineers (USACE) that may be affected by conveyance options proposed in the EIR/EIS for the Bay Delta Conservation Plan (BDCP). This preliminary jurisdictional determination is the first step that DWR will use to develop an Alternatives Analysis as described in the Environmental Protection Agency (EPA) regulations for implementation of Section 404(b)(1) of the Clean Water Act (CWA). In a separate document, DWR will propose a method for evaluating the condition of these potentially jurisdictional wetlands and other waters. Together with other analyses, these evaluations will contribute to the identification of the Least Environmentally Damaging Practicable Alternative (LEDPA) for the conveyance component of the BDCP.

Preliminary Jurisdictional Identification Methodology

Our proposed method for mapping and quantifying potential Waters of the U.S. is based on analysis of electronic geographic data using a Geographic Information System (GIS). Field data will be collected at a limited number of accessible sites in support of this GIS-based determination.

Before a CWA Section 404 and Section 10 Rivers and Harbors Act application is submitted to the USACE, further investigation may be conducted in the field to refine the boundaries of wetlands and other waters in this Preliminary Jurisdictional Determination following the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE, 2008), and appropriate guidance documents such as Regulatory Guidance Letter 05-05 and “A Field Guide to the Identification of the Ordinary High Water mark (OHWM) in the Arid West Region of the Western United States” (Lichvar and McColley 2008).

The GIS analysis will use five primary data sources to identify areas within the footprints of the BDCP EIR/EIS conveyance alternatives that may constitute Waters of the U.S.:

- California Department of Fish and Game (DFG) GIS dataset showing vegetation and land use for the Sacramento-San Joaquin Delta (“DFG Vegetation GIS”) (Hickson and Keeler-Wolf 2007)
- Soil data from the Natural Resources Conservation Service (NRCS 2010)
- DWR GIS dataset (2010) showing the study area and footprints of the different BDCP EIR/EIS Conveyance Alignment options
- 1-foot resolution true-color digital aerial photographs (Department of Water Resources 2006) taken in May 2006
- 1-meter resolution true-color digital aerial photographs from the National Agriculture Imagery Program (NAIP 2010)

To identify signatures of natural hydrology under different precipitation conditions, additional sources of information will be consulted, including historical aerial imagery available on Google Earth and the USFWS National Wetland Inventory maps.

Vegetation

The DFG Vegetation GIS was created in 2005-2006 for use in conjunction with Delta Regional Ecosystem Restoration Implementation Plan (DRERIP) of the CALFED Ecosystem Restoration Program, and covers the Legal Delta. The DFG Vegetation GIS data layer delineates polygons that indicate the vegetation or land use of the underlying areas. The vegetation polygons are classified into 129 mapping units (mapping categories), which are based on a floristic classification system.

The vegetation categories include numerous aquatic habitats, including wetland types, mudflats, and open water. However, the floristic classification system (based on vegetation only) does not distinguish between tidal and non-tidal hydrologic regimes. Because tidal and non-tidal waters differ greatly in their habitat functions, further analysis will be undertaken to distinguish tidal and non-tidal habitat types.

Aerial photo interpretation will be used to refine some features that were included in broad categories or are at a scale below the detection limits of the vegetation mapping. For example, some ditches or wetlands that were included within an “Agriculture” vegetation type will be delineated, and roads or other non-wetland or riparian areas that were included within riparian vegetation polygons will be removed from those polygons. Polygon attributes may also be changed to reflect land use changes since the vegetation mapping was conducted.

NRCS Soils

DWR will consult NRCS soil maps of Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties. The map units associated with hydric soils will be selected from the county maps and a separate GIS layer will be created to show and label the location, name and criteria of County-listed hydric soils in the area.

BDCP EIR/EIS Conveyance Alignment Options

Some of the BDCP EIR/EIS alternatives contain multiple conveyance alignment options. The features of the proposed alignment options include canals, tunnels, intakes, forebays, pumping plants, staging areas, and borrow and spoil areas and are considered to have either permanent or temporary impacts. These features are stored in a geographic feature class within a geodatabase and will be used to determine the surface and subsurface footprint for each alignment option.

Land cover types

Because nearly all of the project area is mapped by NRCS as having hydric soils, we will use DFG's discrete vegetation mapping units and aerial photograph interpretation to create general land cover types to identify potential wetlands and other waters. A preliminary classification includes potentially jurisdictional wetland types shown in Table 1 and upland types in Table 2. Each table includes the corresponding type from the Cowardin classification. This table will be refined during the mapping process.

Table 1. Land cover types that are potential Waters of the U.S., including Wetlands

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Ditches	

Table 2. Land cover types that are generally not wetlands or Waters of the U.S.

Upland Land Cover Type	

Potentially Jurisdictional Wetlands and Other Waters

A GIS data layer of potential wetlands and other waters will be created from the vegetation layer by selecting all non-upland land cover polygons in the Study Area. This map will include all potentially jurisdictional waters, including those waters that may be later determined by the USACE to be isolated or otherwise non-jurisdictional. The GIS data layer of potential jurisdictional Waters of the United States will be intersected with the surface features of the project footprint for each proposed alignment option. The resulting maps will identify only the areas of potential jurisdictional waters that fall inside the project features. Maps will also be made for locations where navigable waters intersect subsurface features of the project footprints.

Documentation

The final products will include:

- project survey or study area maps
- a series of 1:4,800 maps showing each potential Water of the U.S. within the study area and within the surface and subsurface project footprints for each alignment option
- a table of acreages of each polygon and a total for each type of potential Water of the U.S., including wetlands, within each alignment option
- a crosswalk table showing the relationship between the each mapped potential

wetland or other water type, the Cowardin classification, and the California Rapid Assessment Methodology type

Products will be provided in both electronic and hard copy formats. Electronic format will include georeferenced shape files sufficient to enter into USACE and other databases.

References

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31. U.S. Department of the Interior. Washington, D.C.

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